

In the Claims:

1-4. (Cancelled)

5. (Currently amended) A method for providing redundancy in a wireless hub, comprising:

receiving a plurality of upstream signals;

amplifying each upstream signal with a separate low noise amplifier;

down converting the output of each of the low noise amplifier by utilizing a separate down converter;

receiving a down converted signal from each down converter with a separate receiver;

providing a data signal from a receiver; ~~and~~

when no data signal is provided by one of the receivers, selecting an alternate low noise amplifier to amplify the associated upstream signal; and

when no data signal is provided by one of the receivers after selecting an alternate low noise amplifier, providing the output of the low alternate noise amplifier associated with the receiver to a redundant down converter, the redundant down converter providing a redundant down converted signal to a redundant receiver.

6-10. (Cancelled)

11. (Original) A method for low penetration redundancy, the method comprising:

receiving a plurality of upstream signals;

amplifying each upstream signal with a separate low noise amplifier;

splitting each amplified signal into two signals;

down converting the output of each of the low noise amplifier with a single down converter;

receiving a down converted signal from the down converter with a single receiver;

time sharing the down converter and receiver during a low penetration period;

providing a data signal from the receiver; and

when no data signal is provided by the receiver when receiving a signal from one of the low noise amplifiers, providing the output of the low noise amplifier to a redundant down converter, the redundant down converter providing a redundant down converted signal to a redundant receiver.

12. (New) The method according to Claim 5, wherein the wireless hub is part of a system comprising $N + 1$ downconverters and upconverters elements that provide full redundancy for N of the elements.

13. (New) The method according to Claim 5, further comprising the step of utilizing a redundant converter to increase bandwidth of a selected channel of the wireless hub on an ad hoc basis.

14. (New) The method according to Claim 5, wherein the wireless hub is a hub in a broadband wireless access system.

15. (New) The method according to Claim 5, wherein said step of receiving comprises receiving the plurality of upstream signals from an antenna via a splitter that feeds the plurality of upstream signals to each of the low noise amplifiers.

16. (New) The method according to Claim 15, wherein the splitter comprises a passive unit splitter.

17. (New) The method according to Claim 5, wherein the plurality of upstream signals are received on a sectorized antenna of the wireless hub.

18. (New) The method according to Claim 5, further comprising the step of replacing the separate low noise amplifiers while the upstream signals are being processed by the alternate and redundant components of the wireless hub.

19. (New) The method according to Claim 5, further comprising the step of replacing, in order, each of the separate low noise amplifiers, separate downconverters, and separate receivers while the upstream signals are being processed by the alternate and redundant components of the wireless hub.

20. (New) The method according to Claim 5, further comprising the step of periodically switching between low noise amplifiers for testing purposes.

21. (New) The method according to Claim 20, wherein said step of periodically switching comprises switching between upstream bursts.

22. (New) The method according to Claim 5, wherein at least one of the downconverters comprises an oscillator locked on to a reference oscillator derived from a Global Positioning System (GPS) receiver in the wireless hub.

23. (New) The method according to Claim 5, wherein the alternate and redundant components of the wireless hub are used on an ad hoc basis to increase bandwidth of the wireless hub.

24. (New) The method according to Claim 11, wherein the low penetration redundancy is implemented in conjunction with a wireless hub in a broadband wireless access system.

25. (New) The method according to Claim 11, wherein the step of splitting comprises splitting each amplified signal via a passive unit splitter.

26. (New) The method according to Claim 11, further comprising the step of utilizing a set of redundancy components to expand to a high penetration configuration when needed.

27. (New) The method according to Claim 11, wherein the method is implemented in a wireless hub having a sectorized antenna and corresponding LNAs, and utilizing only one downconverter during normal low penetration operations.

28. (New) The method according to Claim 27, wherein the sectorized antenna is a single omni antenna.

29. (New) The method according to Claim 27, wherein the sectorized antenna and corresponding LNAs comprise a set of antennas and an equal numbered set of LNAs.

30. (New) The method according to Claim 27, wherein the sectorized antenna and corresponding LNAs comprise a set of 8 antennas and 8 LNAs.

31. (New) The method according to Claim 11, wherein at least one of the downconverters comprises an oscillator locked on to a reference oscillator derived from a Global Positioning System (GPS) receiver in the wireless hub.